

# Prof. Luis Sánchez

Universidad Complutense de Madrid

**Talk: Supramolecular polymers and copolymers. En route to new functional ensembles.**



## Abstract

### SUPRAMOLECULAR POLYMERS AND COPOLYMERS. EN ROUTE TO NEW FUNCTIONAL ENSEMBLES

Supramolecular polymers are macromolecules built up from monomeric units joint together by means of non-covalent interactions. The function and potential application of such supramolecular polymers strongly depends on the mechanism, isodesmic or cooperative, followed by those monomeric species to yield the aggregated species.[1] In this seminar, a general introduction on supramolecular polymerization, including some relevant aspects related to thermodynamics and kinetics, and three recent and representative examples of the research related to supramolecular polymers carried out in our research group at Universidad Complutense de Madrid (UCM) will be presented.[2] In the first example, the thermodynamically controlled supramolecular polymers formed by [6]helicenes that afford new CPL-emitters with spin filtering features will be presented (Figure 1a).[3] In the second example, the kinetically controlled supramolecular polymerization of N-annulated perylenes (NPBIs in Figure 1b) and the strong influence of the linker length in the differentiation process will be exposed. [4] Finally, I will comment on the very recent example of thermodynamically controlled supramolecular copolymerization between electronically and geometrically complementary tricarbonylamides (Figure 1c).[5] In summary, in this seminar, I will present an overview of those topics related to supramolecular polymerization that are currently underway at UCM.

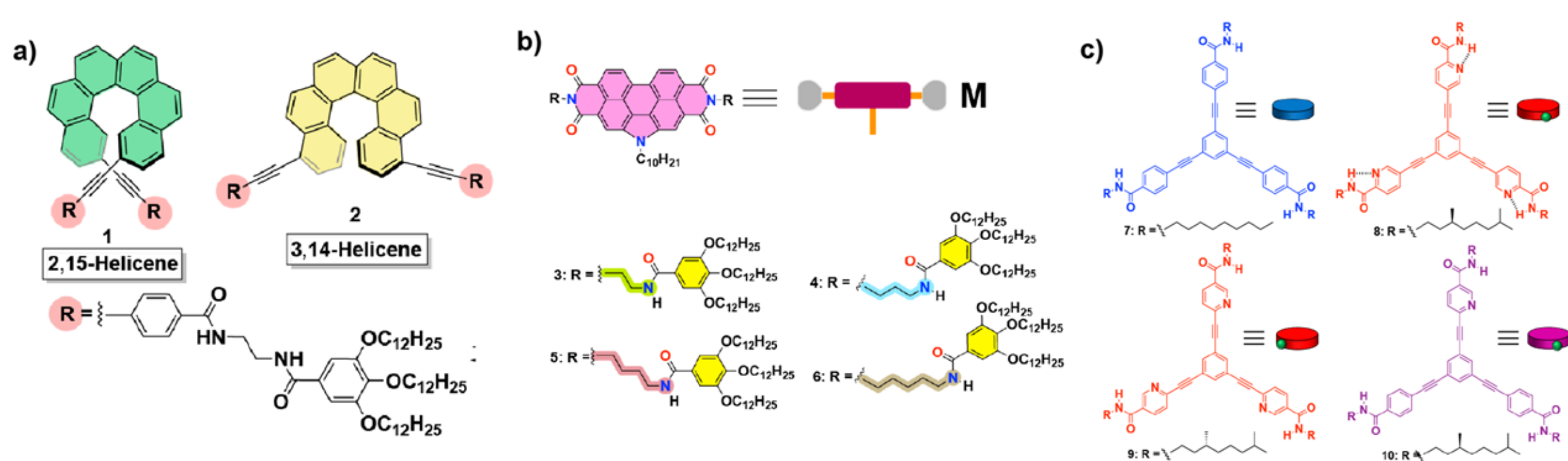


Figure 1. Representative examples of the supramolecular polymers built up at UCM from [6]helicenes (a), NPBIs (b) and tricarbonylamides (c).

#### References

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## Biography

Luis Sánchez was born in 1970 in Toledo (Spain) and is Full Professor of Organic Chemistry at the University Complutense of Madrid (UCM), Spain. He received his Ph.D. in Organic Chemistry at the University Complutense of Madrid in 1997 under the supervision of Prof. Carlos Seoane and Nazario Martín, where he carried out the synthesis and studied the properties of C60-donor dyads and triads. From 1999 to 2000 he worked as a postdoctoral researcher with Professor Jan C. (Kees) Hummelen (University of Groningen, The Netherlands) on the synthesis of supramolecular architectures based on C60 and their application in the preparation of organic solar cells. In 2002, he was appointed as an associate professor at UCM and he has been promoted to Full Professor in October, 2017. He is currently co-author of around 150 publications and was awarded with the Prize to Novel Researchers of the RSEQ in 2003. He has directed and co-directed nine Doctoral Theses and three more that are currently underway. In 2020, he was awarded with the Ignacio Ribas Medal by the Specialized Group on Organic Chemistry of the Spanish Royal Society of Chemistry (RSEQ).